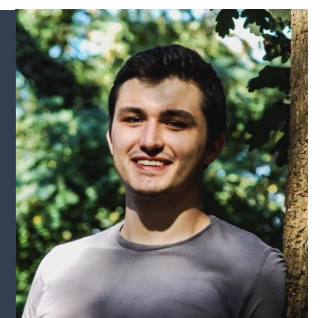


'Little Things Mean a Lot': Understanding the 'Genius' of Toots Thielemans through an Organological Examination of the Chromatic Harmonica

Alexandre PIRET
 Université de Liège – Vrije Universiteit Brussel
 FNRS-FRS
 apiret@uliege.be



Introduction

Toots Thielemans (1922-2016) is best remembered today as one of the greatest exponents of his signature musical instrument, the chromatic harmonica, to the point of often being considered a genius in the field. While it's no exaggeration to say that he developed an uncommon, full mastery of the instrument, his achievements should not necessarily remain unexplained and wrapped in the opaque, mysterious veil of 'genius'.

The harmonica tablature system

In addition to standard musical notation, the figures in this poster use the harmonica tablature system, which shows the fingerings according to the following conventions:

- number number of the hole played
- drawn airflow (absence of " - ": blown airflow)
- ' lever pressed (absence of " ' ": lever released)
- * hole blocked with the tongue ('tongue block' technique)
- = repeated fingering

General principles

The following description is based on that of a 3-octave (12-hole) instrument in C, the type used by Thielemans during most of his career.

On the chromatic harmonica, the emission of a given note depends on three factors: the hole played, the direction of the airflow (blown or drawn), and the position of the lever (released or pressed). Each fingering is a unique combination of these three factors. By combining these different parameters, the instrument allows the following four 'natural arpeggios' to be played (Fig. 1).

Fig. 1. The 4 'natural arpeggios' of the 1-hole C chromatic harmonica.

Put in the order of the chromatic scale, the sum of these notes produces the following overall tone set (Fig. 2).

Fig. 2. Total tone set of the 12-hole C chromatic harmonica.

It is worth noting the many repeated notes (C, F, D^b), as well as the highest note (-12') which, contrary to the logic of the instrument's design, provides an additional high D instead of a repeated C.

Although the instrument allows several notes to be played simultaneously, only the four 'natural arpeggios' can actually be played as chords, since it is impossible to combine tones whose fingerings require opposite airflow directions and lever positions. The only way to suggest other harmonies is to play only a fraction of these 'natural arpeggios', limiting precisely the portion of the embouchure covered by the mouth, or even subtracting certain middle notes using the 'tongue block' technique, which consists of covering certain holes with the tongue. In addition to octaves, the chromatic harmonica allows to play some thirds/sixths, fourths/fifths, as well as a limited number of sevenths and seconds, and unisons (Fig 3).

Fig. 3. Table of all the intervals that can be played simultaneously on a 12-hole C chromatic harmonica (example shown on one octave only).

Mechanical opportunities

In short, the challenges of playing the chromatic harmonica can be summed up as the ease and difficulty (if not the possibility and impossibility) of performing note sequences that involve varying one or more of the parameters (selected hole, airflow direction, lever position). We can further describe the opportunities (and limits) of the instrument by reviewing the impact of varying one parameter at a time.

Fig. 4. Table of all the trills and embroideries that can be played using different methods on a 12-hole C chromatic harmonica (example shown on one octave only).



Lever position variation: The harmonica's lever, reset to its original position by a spring, enables rapid note changes. It can be used to create trills and to introduce embroideries and appoggiaturas between a limited number of notes (Fig. 4).

Hole position variation ('shake' technique): This allows rapid glissandi on the four 'natural arpeggios'. It can also be used to make quick back-and-forth between two adjacent holes for appoggiaturas and embroideries, or even continuous back-and-forth movements to produce a trill (the 'shake'). These effects are possible with a limited number of note groups (Fig. 4).

Airflow direction variation: This is certainly the most difficult parameter to switch quickly, especially as limits of the human body are quickly reached. To compensate for the slowness of the diaphragm, one can restrict the air cavity to the mouth area and control the air flow using the throat muscles, thus achieving rapid exchanges between a limited number of pairs of notes (Fig. 4).

In a nutshell, to obtain a given effect (e.g. a trill), depending on the notes chosen, the performer will use different technical means, and obtain variable sound results. One may also be confronted with impossibility of combining certain notes. The chromatic harmonica is therefore a highly 'irregular' and idiomatic instrument.

The body-instrument relationship, a source of further effects

But there's more! The chromatic harmonica's mouthpiece implies a particular body-instrument relationship. Unlike 'non-free' reed instruments, the performer has no direct bodily contact with the reed, and therefore no possibility of directly controlling its action with the lips, teeth or tongue. Once the mouth is placed on the mouthpiece, the instrument acts as an extension of the musician's air column, amplifying any movement. Therefore, the harmonica requires not so much a powerful breath as a subtle one, especially when amplified by a microphone in close contact. This sensitivity of the instrument also makes the technique of 'circular breathing' unusual.

Another particularity of the instrument is its bi-directional airflow. Unlike other horn players, harmonica players must not only keep a sufficient amount of air in their lungs, but also have enough free space to be able to play drawn notes. In this sense, his body functions in a similar way to the bellow of an accordion.

These physiological limits must be taken into account because they determine certain playing limits. However, on the positive side, this particular body-instrument relationship offers many opportunities for musical effects. By influencing the quality and continuity of the airflow, the player can create a wide range of attack effects, from simple vibrato to *growl*-like or *flatterung*-like effects, as well as the well-known *bending*, which can alter the pitch of a note by up to one tone lower.

This poster explores Toots Thielemans' jazz harmonica playing and its evolution through the lens of the instrument's organological particularities. After a detailed description of the functioning, possibilities and limits of this little-known instrument, some examples of Thielemans' recordings are examined. Using transcriptions, I explore how his playing has evolved over the course of his career, between influences, the need to adapt the common language of jazz to the particularities of the instrument and the ambition to make the most of the instrument's 'affordance' to construct an idiomatic and original improvisational language.

Listen to the Music!

Early recordings and influences.

Toots' Blues Thielemans' official recording debut (apart from private recordings) take place around 1950-51 with a series of discs featuring music that was more 'novelty' than purely jazz. Among the fifteen or so titles in this series, *Toots' Blues* (1951) presents many interesting elements of chromatic harmonica technique: some 'shake' effect (bars 1-2), 'small glissandi' (7), polyphonic playing: in thirds (15-16), in sixths and chords (19-20) and in octaves (20-21).



In this first stage of his recorded output, Toots Thielemans is still heavily influenced not only by the pioneers of swing harmonica (Dany Kane, Max Geldray) - particularly in the use of certain 'hot' effects - but also by other virtuosos of the instrument (Larry Adler) and the so-called 'vaudeville' harmonica school (Borrah Minevitch, Les 5 de l'Harmonica, The Mouth Organ Swingers, etc.), from whom he takes the "polyphonic" approach to the instrument.

First maturity: the bebop-inspired modern jazz harmonica

Misty These early influences disappeared almost completely in the course of the following decade. Thielemans develops a modern jazz style modelled on the bebop practice of other horn players and characterised by single-note playing. The recording of *Misty* (1959) reveals the issues behind his ambition to elevate the harmonica, then little regarded in the jazz world, to the same standards as the saxophone or the trumpet. On the one hand, Thielemans develops a mastery of the instrument that enables him to execute almost any musical line (even the least idiomatic) with agility and evenness: see, for example, the diatonic ascending line of bars 25-26, and the 'embroidered' descending line of bars 10-11). On the other hand, his profound knowledge of the instrument leads him to use certain effects and patterns that are very easy to perform: lines requiring only the movement of the mouth (bars 10, 12, 14, 28), chromatic progressions without changing the direction of the airflow (1, 14), appoggiaturas, embroideries and chromatic approaches (4, 9, 12, 25, 34).

Second maturity: towards a more "idiomatic" modern jazz harmonica

Speak No Evil From the end of the 1960s onwards, this 'copycat' bebop style evolves into a more idiomatic way of playing, in which Thielemans dares to highlight some of the harmonica's distinctive features. *Speak No Evil* (1988), recorded at the peak of his maturity, reveals a variety of new effects and even some 'noisy' aspects: glissandi or quasi-glissandi on natural arpeggios (bars 13, 15, 19) or on groups of mixed notes (14-15), a trill played with the simple action of the lever (50-51), and a remarkable 'shake' passage (38-39) where Thielemans alternates notes with the simple action of the lever (41). In addition, one can note the influence of Stevie Wonder's 'pop' harmonica, notably in the use of exacerbated bendings (2-5, 18) and the systematic approach to a series of notes with appoggiaturas performed with the action of the lever (9-10).

Conclusion

Toots Thielemans' musical universe does not, of course, end with these three examples. For example, we could have also discussed how, in the last decade of his career, the combined effects of physical ageing and a later degree of artistic maturity led him to develop a more sober way of playing, that might be described as 'late style'. What can be learned from this exploration of the evolution of Toots Thielemans' style, in relation to the specificities of the chromatic harmonica, is that if there is 'genius' in him, it is not inexplicable. Thielemans forged his own style by exploring and discovering the possibilities (and limits) of the instrument. Gradually distancing himself from certain role models and influences (while remaining receptive), he has carried on his artistic quest and created an original and idiomatic modern jazz language.